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RSCG Consistency Review

GRNS Meeting

April 2, 2002

Washington, D.C.

RSCG/Pre-Houston

- **Focused on 4 Systems**
  - **W-1, IPSR**
  - **G-5, Gas Fast Reactor**
  - **L-2, Metal Fueled, Na Cooled, Pyroprocess**
  - **N-2, Gas Core Reactor**
- **Full Group met in Berkeley 2/28-3/1**

General Comments

- **Justification (comments) weak**
- **Uncertainty bands seem narrow**
- **Design conditions/assumptions should be specified**
- **Inherent vs. engineered features should be called out**
- **Consistent assumptions regarding fuel cycle used**

General Comments

- **Consistent use of “blank boxes”**
- **Criteria weighting concern**
  - **Fundamental flaws may not be sufficiently reflected in total score for goal**
- **Specific characteristics to be considered given for each metric**

Houston Review

- **General Issues**
  - **Reference ALWR fixed in time or improving?**
    - **Agreed that reference must be fixed in time**
  - **First of a kind or Nth of a kind?**
    - **Nth of a kind appropriate for considering potential.**

Houston Review

- **General Issues**
  - **Confusion between criterion #16, long thermal response response time, and criterion #20, long time constant.**
    - **Criterion #16 intended to consider thermal inertia for design basis transients.**
    - **Criterion #20 intended to consider heat capacity for severe severe accidents (design extension conditions).**

Houston Review

- **General Issues**
  - **Confusion on point of reference for source term.**
    - **Clarified that release was from fuel to coolant.**
    - **Capture by coolant or containment/confinement credited in criterion # 23**

Review Outcome

- **Long discussions on each criterion, but consensus gained on scoring adjustments.**
  - **Criterion # 10, Reliability, especially difficult**
- **Most adjustments changed the magnitude of uncertainty or the shape of the distribution used.**

Houston Outcome

- **Bi-Polar Distributions**
  - **Criterion # 12, Worker/Public Safety, Accidents**
    - **LM, maintenance concern on original scoring**
    - **Changed to bound concern with uncertainty**
  - **Criterion # 13, Reliable Reactivity Control**
    - **Molten salt, uncertainty with respect to void coefficient**

General Conclusions

- **Satisfied that the changes made in Houston yield reasonable consistency in system scoring in the Safety and Reliability Goal area.**
- **Consideration of fuel cycle facilities weak due to lack of detailed information, but relative results shouldn't be significantly affected.**